

Homework 4.2

Complete on a separate sheet of paper!

Solve each proportion:

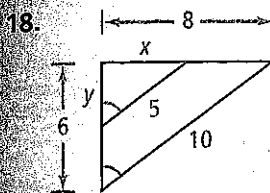
① $\frac{6}{11} = \frac{15}{2x}$

② $\frac{x}{3} = \frac{x+4}{5}$

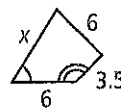
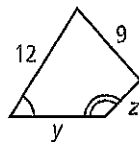
③ $\frac{8}{x+9} = \frac{2}{x-3}$

Algebra The polygons are similar. Find the value of each variable.

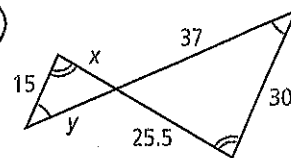
See Problem 3.



19.



20.



STEM 21. Web Page Design The space allowed for the mascot on a school's Web page is 120 pixels wide by 90 pixels high. Its digital image is 500 pixels wide by 375 pixels high. What is the largest image of the mascot that will fit on the Web page?

See Problem 4.

22. Art The design for a mural is 16 in. wide and 9 in. high. What are the dimensions of the largest possible complete mural that can be painted on a wall 24 ft wide by 14 ft high?

STEM 23. Architecture You want to make a scale drawing of New York City's Empire State Building using the scale 1 in. = 250 ft. If the building is 1250 ft tall, how tall should you make the building in your scale drawing?

See Problem 5.

24. Cartography A cartographer is making a map of Pennsylvania. She uses the scale 1 in. = 10 mi. The actual distance between Harrisburg and Philadelphia is about 95 mi. How far apart should she place the two cities on the map?

In the diagram below, $\triangle DFG \sim \triangle HKM$. Find each of the following.

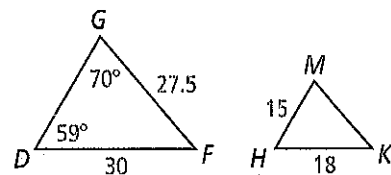
25. the scale factor of $\triangle HKM$ to $\triangle DFG$

26. $m\angle K$

27. $\frac{GD}{MH}$

28. MK

29. GD



30. Flags A company produces a standard-size U.S. flag that is 3 ft by 5 ft. The company also produces a giant-size flag that is similar to the standard-size flag. If the shorter side of the giant-size flag is 36 ft, what is the length of its longer side?